

THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION

OF: GEWEHR ET AL.
SERIAL NO. 10/616,950
FILED: JULY 11, 2003
FOR: FUNGICIDAL USE

CONFIRMATION No.: 2161
GROUP ART UNIT: 1616
EXAMINER: SABIHA N. QAZI

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents and Trademarks, Alexandria, Va 22313-1450, on:

Date of Deposit June 10, 2005
Person Making Deposit Sabine Berg
Signature S. Berg

Honorable Commissioner
for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION UNDER 37 C.F.R. §1.137(b)

Sir:

The aforementioned application became abandoned for failure to timely respond to the Office Action of September 29, 2004. The date of abandonment was March 30, 2005.

Applicants hereby petition to revive this unintentionally abandoned application. The required response is submitted along with this petition. The petition fee pursuant to 37 C.F.R. §1.17(m) in the amount of \$1,500.00 paid by credit card (Form PTO-2038 enclosed).

The entire delay in filing the required response to the Office Action of September 29, 2004, from the due date for the reply to this petition was unintentional.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 14.1437. Please credit any excess fees to such deposit account.

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Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Sabine Berg

S. Berg

REPLY UNDER 37 C.F.R. §1.111

Sir:

In reply to the Office action of September 29, 2004, it is respectfully requested that the following remarks and the attached amendments¹⁾ as well as the enclosed Terminal Disclaimer be entered and considered for further prosecution of the above-identified application:

R E M A R K S

Claims 1, 2, 4 and 5 as set forth in Appendix I of this paper are now pending in this case. Claim 1 has been amended as indicated in the listing of the claims.

Accordingly, applicants have removed the reference to "hydrogen" in the definition of R in Claim 1, and the respective limitation is incorporated by reference into Claim 4. No new matter has been added.

The Examiner rejected Claims 1, 2, 4 and 5 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of *Curtze et al.* (US 6,127,570). It is respectfully requested that the Examiner favorably reconsider her position in light of the enclosed Claim Amendments and the following remarks.

1) Cf. the Claim Amendments set forth in Appendix I on page 7 of this paper.

The Examiner took the position that the compounds represented by applicants' formula (I) as well as the compound 5-bromo-2',6-dimethyl-2,4',5',6'-tetramethoxybenzophenone which is referenced in Claims 2 and 5 was encompassed by the compounds addressed in the teaching of *Curtze et al.* It is respectfully noted that applicants' formula (I) requires that R of the OR substituents which is bonded to the phenyl ring on the right hand side of the formula be a C₁-C₄-alkyl radical (cf. Claims 1 and 4) or a methyl group (cf. Claims 2 and 5).

In contrast thereto, the moiety R³ of the group which occupies the corresponding position of the formula depicted by *Curtze et al.* represents a hydrogen atom or a protecting group²⁾, and the expression protecting group "*refers to a group which is easily cleaved off without affecting the alkoxy groups present*" in the compound³⁾. Since the protective groups of *Curtze et al.*'s compounds are to be cleavable without cleaving alkoxy groups, the protective groups are clearly different from alkoxy groups. Applicants' compounds of formula (I) as well as the compound 5-bromo-2',6-dimethyl-2,4',5',6'-tetramethoxybenzophenone are therefore clearly outside of the realm of the compounds which are addressed by the teaching of *Curtze et al.*

It is further respectfully urged that the teaching of *Curtze et al.* specifically conveys that it is desired that the moiety R³ be cleaved without affecting alkoxy groups in the molecule after the compound has been applied to the plants⁴⁾. Accordingly, the teaching of *Curtze et al.* would not have motivated a person of ordinary skill in the art to replace the hydrogen or the cleavable protective group which is present in the compounds of *Curtze et al.* by a C₁-C₄-alkyl group as required for applicants' formula (I) or by a methyl group as required in accordance with the compound 5-bromo-2',6-dimethyl-2,4',5',6'-tetramethoxybenzophenone. Obviousness within the meaning of Section 103(a) requires, however, that the prior art provide for some teaching or suggestion which would have motivated a person of ordinary skill in the art to do what the applicant has done⁵⁾. For obviousness within the meaning of Section 103(a) it is also necessary that the prior art reference teach or suggest all of the features which characterize the claimed invention.

2) Cf. col. 1, indicated line 67, of *US 6,127,570*.

3) Cf. col. 3, indicated lines 7 to 16, of *US 6,127,570*. Cf. also col. 3, indicated lines 47 to 50, and col. 4, indicated lines 44 to 45, of *US 6,127,570*.

4) Cf. col. 3, indicated lines 17 to 19, of *US 6,127,570*.

5) Cf. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438, 1442 (CAFC 1991).

Applicants' have found that the compounds represented by formula (I), and the compound 5-bromo-2',6-dimethyl- 2,4',5',6'-tetramethoxybenzophenone, are especially suitable to control eyespot or stem break (*Pseudocercospora herpotrichoides*) which primarily affect the stem of crop plants and applicants' claims are, accordingly, drawn to a method for controlling *Pseudocercospora herpotrichoides*. The compounds of *Curtze et al.* are taught to be specifically improved for foliar systemicity, and a person of ordinary skill in the art could, therefore not reasonably expect that the compounds exhibit a particular effect where the control of *Pseudocercospora herpotrichoides* is sought. It is well settled that obviousness cannot be predicated on what is not known at the time an invention is made, even if the inherence of a certain feature is later established⁶). It is also established that the determination whether a claimed method is obvious has to take the particular result which is obtained in the method into consideration⁷).

In light of the structural differences between applicants' compounds (I) and the compounds addressed by the teaching of *Curtze et al.* as well as the very particular effects which are achieved in accordance with applicants' method it is therefore respectfully urged that the teaching of *Curtze et al.* cannot be deemed to render applicants' invention prima facie obvious within the meaning of Section 103(a). Favorable reconsideration of the Examiner's position and withdrawal of the respective rejection is solicited.

The Examiner rejected Claims 1, 2, 4 and 5 under the judicially created doctrine of obviousness-type double patenting as being unpatentable in light of

- Claims 1 to 3 and 9 to 11 of *Cotter et al.* (US 6,521,628), and
- Claims 1, 3 to 7 and 9 to 14 of *Cotter et al.* (US 6,734,202).

Applicants herewith submit a terminal disclaimer disclaiming the terminal part of a patent granted on this application which would extend beyond the expiration date of *Cotter et al.*'s U.S. Patents No 6,521,628 and No. 6,734,202, and agreeing that a patent granted on this application shall be enforceable only for and during such period that the legal title of such patent is the same as the legal title to

6) Cf. *In re Rijckaert*, 9 F.2d 1531, 28 USPQ2d 1955 (CAFC 1993); *In re Adams*, 356 F.2d 998, 148 USPQ 742 (CCPA 1966).

7) Cf. *In re Dillon*, 919 F.2d 688, 695, 16 USPQ2d 1897, 1903 (CAFC 1990) (*en banc*), cert. denied, 500 U.S. 904 (1991).

Cotter et al.'s U.S. Patents No 6,521,628 and No. 6,734,202. Withdrawal of the rejection under the judicially created doctrine of obviousness-type double patenting is therefore respectfully solicited.

The Examiner also rejected Claims 1, 2, 4 and 5 under the judicially created doctrine of obviousness-type double patenting as being unpatentable in light of Claims 1 to 5 of *Sieverding et al.* (US 6,696,497). It is respectfully noted that the application of *Sieverding et al.* which ultimately matured into US 6,696,497 was published as US 2002/0065313 A1 on May 30, 2002. Accordingly, the following is respectfully submitted.

The teaching of *Sieverding et al.* relates to a synergistic fungicidal composition⁸⁾ which comprises effective amounts of

(a) a benzophenone which generically encompasses applicants' compounds (I) and the compound 5-bromo-2',6-dimethyl- 2,4',5',6'-tetramethoxybenzophenone, and

(b) a valinamide compound represented by a formula (II),

and which is effective against a broad variety of phytopathogenic fungi⁹⁾ in particular on dicotylydoneous plants such as grapes, tobacco, potato, tomato, fruit crops, oil seed crops, vegetables and ornamentals, and also on monocotylydoneous crops¹⁰⁾.

The teaching of *Sieverding et al.* differs from the method which is defined in applicants' claims for example in that the fungicidal effect which is achieved in accordance with *Sieverding et al.*'s teaching is due to a combination of synergistic amounts of two different compounds whereas the fungicidal effect referenced in applicants' claims is solely achieved by the application of one active compound. The Examiner will note that the data which are compiled in *Sieverding et al.*'s tables in cols. 11 and 12, of US 6,696,497 corroborate that the synergistic cooperation of the two constituents is necessary to arrive at a suitable fungicidal effect. Moreover, the data show that the benzophenone representative BP-4 has no or only an insufficient effect when it is applied without the valinamide co-constituent of the synergistic mixture.

Accordingly, a person of ordinary skill in the art could not reasonably derive from the teaching of *Sieverding et al.* that a benzophenone compound falling within the realm of the benzophenones

8) Cf. col. 1, indicated lines 7 to 65, of US 6,696,497.

9) Cf. col. 6, indicated lines 10 to 24, of US 6,696,497.

10) Cf. col. 6, indicated lines 25 to 29, of US 6,696,497.

which are encompassed by *Sieverding et al.*'s formula would be particularly suitable to control any specific fungus which falls within the broad variety of phytopathogenic fungi enumerated by *Sieverding et al.*

The teaching of *Sieverding et al.* differs from the method which is defined in applicants' claims also in that *Sieverding et al.* merely generically enumerate genera of phytopathogenic fungi without, however, specifying the fungus *Pseudocercospora herpotrichoides*.

It is well settled that obviousness within the meaning of Section 103(a) requires more than the mere possibility to make a selection from the generic disclosure of a reference which mirrors the combination of requirements set forth in an applicant's claim. For obviousness under the provisions of Section 103(a), the reference also has to provide some teaching or suggestion which would motivate a person of ordinary skill in the art to make the particular selection which results in the claimed combination¹¹⁾. Neither the teaching of *Sieverding et al.* nor in the general technical background knowledge of a person of ordinary skill in the art provides any information which would have motivated a person of ordinary skill to select the fungus *Pseudocercospora herpotrichoides* from the genera of phytopathogenic fungi enumerated by *Sieverding et al.* and to select the benzophenones of applicants' formula I from the realm of the benzophenones which *Sieverding et al.* use as a co-constituent for synergistic fungicidal mixtures for the control of the selected fungus *Pseudocercospora herpotrichoides*. Where as here the motivating teaching or suggestion is not found in the reference, any possible selection and combination within the generic disclosure is equally likely and the reference is no more than an invitation to make and try out each of the possible selections and combinations. "Obvious to try" is, however, not a proper basis for finding that a claimed invention is unpatentable under Section 103(a)¹²⁾. Also, under those circumstances, a focus on the particular selection which results in the claimed combination would have to be regarded as being based on hindsight¹³⁾.

11) Cf. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438, 1442 (CAFC 1991). See also In re Baird, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (CAFC 1994); In re Jones, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (CAFC 1992).

12) Cf. Merck & Co. Inc. v. Biocraft Laboratories Inc., 874 F.2d 804, 10 USPQ2d 1843 (CAFC 1989) where the Court held that an invention was merely "obvious to try" if the prior art gives either no indication of which parameters are critical or no direction as to which of the many possible choices is likely to be successful.

13) Cf. In re Dow Chemical Co., 837 F.2d 469, 5 USPQ2d 1529 (CAFC 1988).

It is therefore respectfully requested that the rejection of Claims 1, 2, 4 and 5 under the judicially created doctrine of obviousness-type double patenting based upon the teaching of *Sieverding et al.* be withdrawn. Favorable action is solicited.

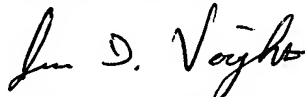
To further evidence patentability over the prior art applicants herewith submit a Declaration of Dr. Reinhard Stierl. In his Declaration, Dr. Stierl describes comparative tests which corroborate that the activity of the compounds of applicants' formula (I) against *Pseudocercospora herpotrichoides* in crop plants is unexpectedly superior to the effects which can be achieved with benzophenone compounds having a seemingly similar structure. The data further support that applicants' invention was not prima facie obvious within the meaning of Section 103(a).

In light of the foregoing and the attached, the application should now be in condition for allowance. Early action by the Examiner would be greatly appreciated by applicants.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 14.1437. Please credit any excess fees to such deposit account.

Respectfully submitted,

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Encl.: CLAIM AMENDMENTS (Appendix I)
Terminal Disclaimer
Declaration

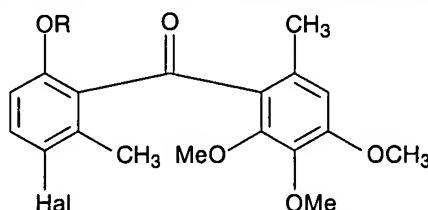
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A P P E N D I X I:

CLAIM AMENDMENTS:

Amend Claim 1 as indicated in the following listing of the claims:

1. (currently amended) A method for controlling *Pseudocercospora herpotrichoides* in crop plants comprising applying to said crop plants an effective amount of benzophenones of the formula I



in which

R is ~~hydrogen or~~ C₁-C₄-alkyl and

Hal is fluorine, chlorine or bromine.

2. (previously presented) The method as claimed in claim 1, wherein an effective amount of 5-bromo-2',6-dimethyl-2,4',5',6'-tetramethoxybenzophenone is applied.
3. (canceled)
4. (previously presented) A method for controlling *Pseudocercospora herpotrichoides* in wheat and barley comprising applying to said wheat and barley an effective amount of the benzophenones defined in claim 1.
5. (previously presented) The method as claimed in claim 4, wherein an effective amount of 5-bromo-2',6-dimethyl-2,4',5',6'-tetramethoxybenzophenone is applied.

6. JUN. 2005 14:41

REITSTOETTER, KINZEBACH & PARTNER
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION

OF: GEWEHR ET AL.

SERIAL No. 10/616,950

FILED: JULY 11, 2003

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D E C L A R A T I O N

I, Reinhard Stierl, Dr. agr., a citizen of the Federal Republic of Germany and residing at Jahnstr. 8, 67251 Freinsheim, Germany, hereby declare as follows:

I am fully trained agricultural engineer, having studied horticultural science at the Technical University of Munich-Weihenstephan, Germany, from 1987 to 1992;

From 1994 to 1999 I furthered my studies at the Institute of Plant Disease of the University of Bonn, and I was awarded my doctor's degree by the said university in 1999;

I joined BASF Aktiengesellschaft of 67056 Ludwigshafen, Germany, in 1998, and have since been working in the field of the characterization and screening of fungicidal substances, and am therefore fully conversant with the technical field to which the invention disclosed and claimed in application Serial No. 10/616,950 belongs.

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Serial No. 10/616,950

GEWEHR et al.

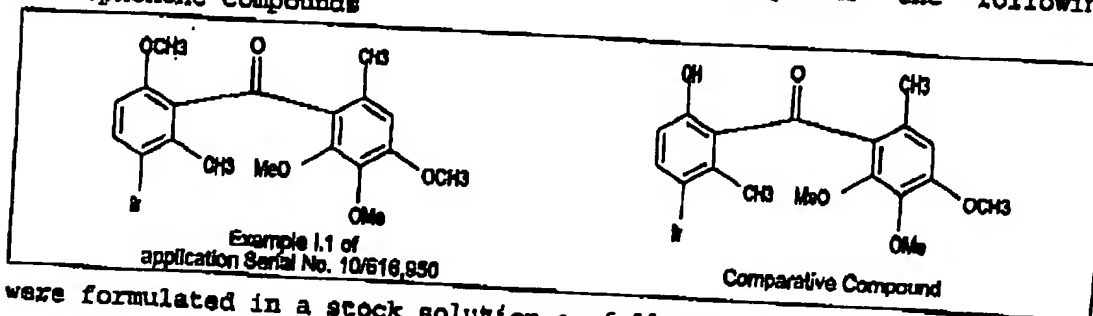
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I have studied the record of application Serial No. 10/616,950, and particularly the Office action mailed on September 29, 2004, and the prior art applied by the Examiner, in particular the teaching of Curtze et al. (US 6,127,570), the teachings of Cotter et al. (US 6,521,628 and US 6,734,202), and the teaching of Sieverding et al. (US 6,636,497).

It is my understanding that the Examiner contends that the particular features of the benzophenones which are represented by formula (I) of application Serial No. 10/616,950, as well as the suitability of the compounds to control *Pseudocercospora* *herpotrichoides* in crop plants which properly results from the particular structure of the benzophenones of the formula (I), were already well within the purview of a person working in the field of fungicidal ingredients in view of the prior art teachings.

I cannot share the Examiner's position as set forth in the Office action of September 29, 2004, for the following reasons. As is the case in all technical areas concerned with biologically active compounds a person working in the field of fungicides might expect that compounds having a similar or at least a comparable chemical structure act similarly or at least exhibit an effect of a comparable order of magnitude. However, this is not the case where the control of *Pseudocercospora* *herpotrichoides* in crop plants with benzophenone compounds is concerned.

To illustrate that even seemingly minor variations in the structure of the benzophenone have a significant and unexpected effect on the effectivity of the benzophenone compound against *Pseudocercospora* *herpotrichoides* in crop plants the following benzophenone compounds



were formulated in a stock solution as follows:

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A solution of 25 mg of the benzophenone compound was extended to 10 ml with a 99:1 per volume solvent:emulgator mixture containing acetone as the solvent and Uniperol® EL (wetting agent having emulsifying and dispersing action based on ethoxylated alkylphenols) as the emulgator. The 10 ml sample was further extended with water to 100 ml, and the 100 ml sample was then diluted with a mixture of the solvent, the emulgator and water to give the desired concentration.

The activity of the benzophenone compounds against *Pseudocercospora herpotrichoides* in wheat plants was investigated by applying the resulting solution to leaves of potted wheat seedlings cv. "Monopol", inoculating the treated wheat plants and assessing the extent of the development of the infection in the manner described on page 9, indicated line 35, to page 10, indicated line 2, of the application. The results are summarized in the following table:

Benzophenone Compound	Application Rate [ppm]	Fungal Attack [%]
Example I.1	16	19
Comparative Compound	16	56
untreated control		90

The data show that 16 ppm of the benzophenone Example I.1 according to formula (I) of application Serial No. 10/616,950 reduced the *Pseudocercospora herpotrichoides* infection from 90% of the control experiment to 19%. When the same amount of the Comparative Compound was applied, the tested plants still exhibited 56% *Pseudocercospora herpotrichoides* infection.

I find nothing in the disclosure of either one of the references which were applied by the Examiner in the Office action dated September 29, 2004, which suggests or implies that benzophenones which are seemingly structurally closely related exhibit significantly different effects when the compounds are employed to control *Pseudocercospora herpotrichoides* infections in crop plants. In my opinion the superior activity of the compounds of formula (I) of application Serial No. 10/616,950 which is evident from the data shown above could not have been foreseen.

In my opinion the data corroborate that a person working in the field of fungicidal ingredients could not reasonably expect, based on the prior art teachings applied by the Examiner, that the benzophenones

6. JUN. 2005 14:42

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NR. 2769 S. 5

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which are represented by formula (I) of application Serial No. 10/616,950 would achieve results in the control *Pseudocercospora* *herpotrichoides* in crop plants which are distinctly better than the results which are obtained with benzophenone compounds which are structurally closely related but which are outside of the realm of formula (I).

I further declare that all statements made herein of my own knowledge are true and that all statements made on information or belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 101 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at 67056 Ludwigshafen, this 6th day of June 2005.


(Signature of Declarant)